11/8/02 jmg

MEMORANDUM

INTERMOUNTAIN POWER SERVICE CORPORATION

TO: Joe D. Hamblin

FROM: Dennis K. Killian

DATE: November 7, 2002

SUBJECT: Update - Environmental Considerations for Dense Pack Operation

As a follow-up to my memorandum of August 1, 2002 (attached) concerning environmental issues when operating the dense pack modification, I am providing this update to clarify those issues.

Last month IPSC environmental personnel, IPA's Reed Searle, and our counsel met with Utah Division of Air Quality staff and the Utah Assistant Attorney General to resolve questions of interpretation concerning when environmental restrictions apply. As a result, we understand that the State's position is that Unit Two modifications have caused new limits to kick in.

As of April 1, 2002, the new short term limit for NOx on Unit Two is 0.461 lb/MBtu on a 30 day rolling average, SO2 is 0.138 lb/Mbtu on a thirty day rolling average, and PM10 is 0.0184 lb/MBtu on a three hour instantaneous average. These new limits will also apply to Unit One after the 2003 Spring outage.

Additionally, as of April 1, 2002 the new plant-wide cap was triggered on increased emissions. For SO2 and NOx, that cap is 40 tons or less of emissions increase due to the modifications averaged over any given 12 month period. For PM10, the cap is 15 tons. These caps are annual (rolling 12 month) limits on emissions of both units combined, not individually. The values for each of the preceeding were charted in my earlier memorandum.

In order to assist Operations in meeting the new cap, Engineering Services is developing a new Plant Information screen that shows an NOx and SO2 target emission rate in lb/Mbtu based upon the current production rate. This target is calculated on a per unit basis as well as a combined unit basis, using the cap that needs to be met when accounting for a year's worth of NOx and SO2 emissions. The target rate provides Unit Operators an instantaneous goal to compare against actual current operating conditions.

The purpose in providing this screen is to help steer plant operation to minimize emissions while increasing production. I cannot overemphasize the potential impact upon IPSC if our annual emissions for NOx or SO2 exceed 40 tons.

The following chart outlines where we are at as the year is progressing, as well as a projection of how we are lining up to meet the annual emissions cap. The chart also indicates the rate at which a given must be operated to meet the cap at the end of the WEPCO accounting period (3/31/2003).

WEPCO Projections

Unit2	NOx	SO2	Unit 1	NOx	SO2	Plant	NOx	SO2
Baseline[1]	13163.0	1931.2	Baseline[1]	13419.5	1855.4	Baseline[1]	26591.5	3787.5
So Far (tons)	8152.4	1136.2	So Far (tons)	8190.1	1058.8	So Far (tons)	16342.5	2195.0
Yet to go (tons)	5010.6	795.1	Yet to go (tons)	5229.4	796.6	Yet to go (tons)	10249.0	1592.5
Rate to meet[2]	0.380	0.060	Rate to meet[2]	0.429	0.065	Rate to meet[2]	0.404	0.063
Year end at current rate[3]	398.9	-41.2	Year end at current rate[3]	-636.9	-202.8	Year end at current rate[3]	-245.0	-248.9

([1]Tons per year. [2]lb/mmbtu. [3]Actual projected tons over WEPCO, but not necessarily unaccounted.)

Assumptions: Same average heat input rates as since 4/1/02 (U2:7729mmbtu/hr; U1:7523mmbtu/hr). Accounts for a 31 day outage on Unit 1, and a 9 day outage on Unit 2. NOTE: To account for outages, Unit 2 rates could be increased by 4%. The table already accounts for outage adjustments on Unit 1 rates, which decreased by 13%. Data through Oct. 2002.

If you have any questions or comments, please contact myself or Blaine Ipson.

BP/RJC:jmg

cc: Blaine Ipson
George W. Cross
Jerry K. Hintze

08/01/02 jmg

MEMORANDUM

INTERMOUNTAIN POWER SERVICE CORPORATION

TO: Joe D. Hamblin

FROM: Dennis K. Killian

DATE: August 1, 2002

SUBJECT: Environmental Considerations for Dense Pack Operation

Dense Pack Project - Permitting Changes
As you are aware, the permitting of the High Pressure Dense Pack Project required several new limits on emissions. Some of those changes are outlined below:

Pollutant	Former Permit Limit	New Permit Limit	Typical Operation
SO2	0.15 lb/mmbtu	0.138 lb/mmbtu	0.05-0.07 lb/mmbtu
SO2	90% removal	90% removal	92%-94% removal
SO2	5768 tons/year SO2 maximum	5768 tons/year SO2 maximum allowed	Approx 3800 tons/yr
SO2		Less than 40 ton increase per year from modification	
NOx	0.5 lb/mmbtu	0.461 lb/mmbtu	0.40-0.45 lb/mmbtu
NOx	0.5 lb/mmbtu under Acid Rain on annual basis	0.5 lb/mmbtu under Acid Rain on annual basis	
NOx		Less than 40 ton increase per year from modification	

These new limits will present a challenge to Operations wherein emissions must be reduced while production increases. This is particularly true in the case of the 40 tons per year increase cap for SO2 and NOx.

In order to get permit approval for the modifications in the dense pack project, IPSC agreed to manage emissions so that there will be no significant net increase in those emissions over pre-project emissions. For SO2 and NOx, no net significant emissions means less than 40 tons per year, as defined by law. This means that once we begin operating any modified equipment, we cannot emit 40 tons or more of SO2 or NOx over what we have emitted before the project. The emissions before and allowed emissions after (including rates) are:

Pollutant	Emissions - Pre-Project	Average Rate	Max. Allowed Emissions After Project	Max. Rate (at new maximum heat input)
SO2	3,838 tons/yr	0.06 lb/mmbtu	3,878 tons/yr	0.055 lb/mmbtu
NOx	26,413 tons/yr	0.42 lb/mmbtu	26,453 tons/yr	0.387 lb/mmbtu

Dense Pack Project Operating Recommendations

Although the maximum design heat input rate of 9225 Mbtu/hr is unlikely to be reached during normal operation after the modifications are complete, the Environmental group nonetheless recommend that the Unit Operators use the maximum emission rates shown above as their operating guide. For instance, the maximum allowed rate at MCR is 0.387 lb/mmbtu, a substantial reduction from historical rates. We understand the efforts of the UO to balance performance against environmental considerations. But targeting that rate as part of the UO's unit operation will help steer emissions in the right direction. Environmental is also developing a daily report showing the current 30 day rolling average for SO2 and NOx so that the UO can correlate the impact his operating technique has on emission rate.

If you have any questions or comments, please contact myself or Blaine Ipson.

BP/RJC:jmg

cc: Blaine Ipson
George Cross